DVI CAT5 4X Extender

EXT-DVI-CAT5-4X

User's Manual

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Notice

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INTRODUCTION

Congratulations on your purchase of the DVI CAT5 4X Extender. Your complete satisfaction is very important to us.

Gefen

Gefen delivers innovative, progressive computer and electronics add-on solutions that harness integration, extension, distribution and conversion technologies. Gefen's reliable, plug-and-play products supplement cross-platform computer systems, professional audio/video environments and HDTV systems of all sizes with hard-working solutions that are easy to implement and simple to operate.

The Gefen DVI CAT5 4X Extender

The DVI CAT5 4X Extender is the perfect solution for anyone who needs to send multiple (up to four) DVI video sources to multiple (up to four) DVI displays in remote locations at the same time.

The DVI CAT5 4X Extender has 4 DVI video inputs. The DVI sources are sent to up to four DVI CAT5 MS receivers via industry standard CAT-5, CAT-5e or CAT-6 cables. Distances of up to 300 feet for 1080i video, and 150 feet for 1080p video are possible. Signal auto-equalization is set by default and will provide optimal image reproduction for cable runs of 130 feet or less. Manual equalization is available for cable runs at greater distances.

How It Works

Connect your DVI video sources to the DVI CAT5 4X Extender's inputs using the supplied DVI cables. Run two CAT-5, CAT-5e or CAT-6 network cables from the DVI CAT5 4X Extender to each of the DVI CAT5 MS Receivers. Lastly, connect up to four DVI displays to the DVI CAT5 MS receivers at the remote locations.

OPERATION NOTES

READ THESE NOTES BEFORE INSTALLING OR OPERATING THE DVI CAT5 4X EXTENDER

- The DVI CAT5 4X Extender and DVI CAT5 MSR units are housed in a metal box for better RF shielding.
- The maximum cable extension is 300 feet (91 meters) for video resolutions of 1080i and below.
- The maximum cable extension is 150 feet (45 meters) for video resolutions of 1080p.
- If EMI is present anywhere near the RJ-45 video cable runs, it may be necessary to use shielded RJ-45 cable. This is to prevent possible interference from degrading the video signal. Using shielded cable, however, will reduce the maximum distance that the RJ-45 cable can be run.
- Extensions under 130 feet can use Auto EQ (which is on by default). Extensions over 130 feet will require you to manually EQ your signal (see page 5).
- Each cable run must be one continuous run from one end to the other. No splices or use of punch down blocks.
- High quality CAT-6a cabling should be used for maximum performance.
- Do not use stranded or low/no skew cabling. Solid core cabling should be used for maximum performance.
- HDCP Compliant.

FEATURES

Features

- Easily distribute four DVI sources to four remote DVI displays
- Extends video signals up to 300 feet over CAT-5, CAT-5e or CAT-6a network cable
- Maintains 1920 x 1200, 1080p, and 2k resolution video

Package Includes

(1) DVI CAT5 4X - Sender unit
(4) DVI CAT5 MS - Receiver units
(4) 6 foot DVI cable (M-M)
(4) Mounting Plate
(1 set) Rackears
(4) 5V DC power supply
(1) 24V DC power supply

Front Panel

Video 1
RJ45 Outputs

Video 2
RJ45 Outputs

Video 3
RJ45 Outputs

Video 4
RJ45 Outputs

Power LED

Back Panel

24V DC Power Input

Video 1
DVI Input

Video 2
DVI Input

Video 3
DVI Input

Video 4
DVI Input

RECEIVER PANEL DESCRIPTIONS

Front Panel

EQ trim pot

DVI Output

5V DC Power Input

Power LED Indicator

Back Panel

DDC RJ-45 Input

VIDEO RJ-45 Input

CONNECTING AND OPERATING THE DVI CAT5 4X EXTENDER

How to Connect the DVI CAT5 4X Extender

1. Connect your sources (up to four) to the DVI CAT5 4X Extender unit's DVI inputs using the supplied DVI cables.

2. Connect your displays (up to four) to the DVI CAT5 MSR receiver unit's DVI outputs using user supplied DVI cables.

3. Connect both CAT-5, CAT-5e or CAT-6 cables (DDC and Video) between the DVI CAT5 4X Extender and each DVI CAT5 MSR receiver.

NOTE: If field terminating network cable, please adhere to the TIA/EIA-568-B standard. Please see page 9 for more information.

4. Connect the 24V DC power supply into the DVI CAT5 4X Extender sender.

5. Connect the 5V DC power supplies into each of the DVI CAT5 4X receivers.

6. Power on the displays.

7. Power on the sources.

NOTE: If an image is not being shown on the display, please check all cabling for proper connections and follow the steps outlined below and in the next section.

DVI CAT5 4X EXTENDER CONFIGURATION

The DVI CAT5 4X Extender and DVI CAT5 MSR receivers have built-in auto equalization that will automatically tune out any unwanted video noise. This feature is reliable with premium cable runs up to a maximum of 130 feet. It may be necessary to disable this feature if there is either no video being displayed on initial start-up, there is video noise in the image, or the cable run exceeds 130 feet. First, verify that all the proper connections have been made and that all devices are powered on before attempting to disable auto equalization. Please follow the section on the next page to manually equalize the video signal.

MANUAL EQUALIZATION PROCEDURE

The DVI CAT5 4X Extender and DVI CAT5 MSR receiver units both have sets of dip switches located on the underside of their casings. There is a piece of silver metallic tape that must be removed to expose these dip switches. The DVI CAT5 4X Extender unit carries 4 banks of 4 dip switches. Each DVI CAT5 MSR receiver carries one bank of 4 dip switches. Dip switches 1 and 2 on both the sending and receiving units are used in this procedure. Dip switches 3 and 4 are not used. By default, dip switch 2 on each bank of the DVI CAT5 4X Extender should be in the ON position, and all dip switches on each DVI CAT5 MSR receiving unit should be in the OFF position (Auto EQ On). To turn off auto equalization, turn dip switch 1 on the receiving units to the ON position (Auto EQ off). With these settings, please follow the steps below to equalize the picture.

1. Insert a small flat head tool into the trim pot on the receiver unit.

2. Turn the trim pot in a clockwise fashion until it comes to a stop. Do not force the trim pot beyond this point. Doing so may render the trim pot useless.

3. Slowly turn the trim pot counter-clockwise in millimeter increments until the image stabilizes and all video noise disappears.

4. Carefully remove the adjustment tool.

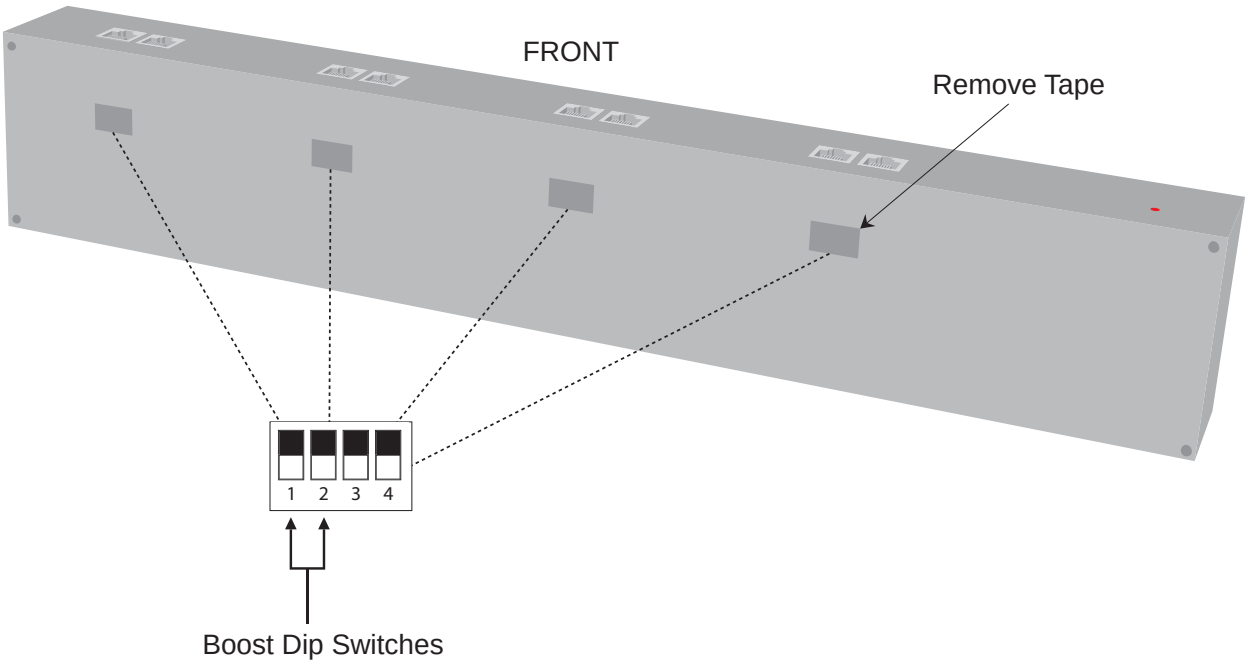
NOTE: If your cable run is beyond 130 feet, or the steps above do not produce any video, it may be necessary to increase the boost from the sending unit. Use the chart below to increase the senders to medium boost by changing the DVI CAT5 4X Extender's dip switches. Once a new boost setting is set, repeat steps 1 through 4 from above. If this still does not produce and image, increase the boost to high and repeat the EQ process.

Sender Dip Switch Settings		
Setting	**Switch 1**	**Switch 2**
Medium Boost	OFF	OFF
No Boost (Default)	OFF	ON
High Boost	ON	OFF
NOT USED	ON	ON

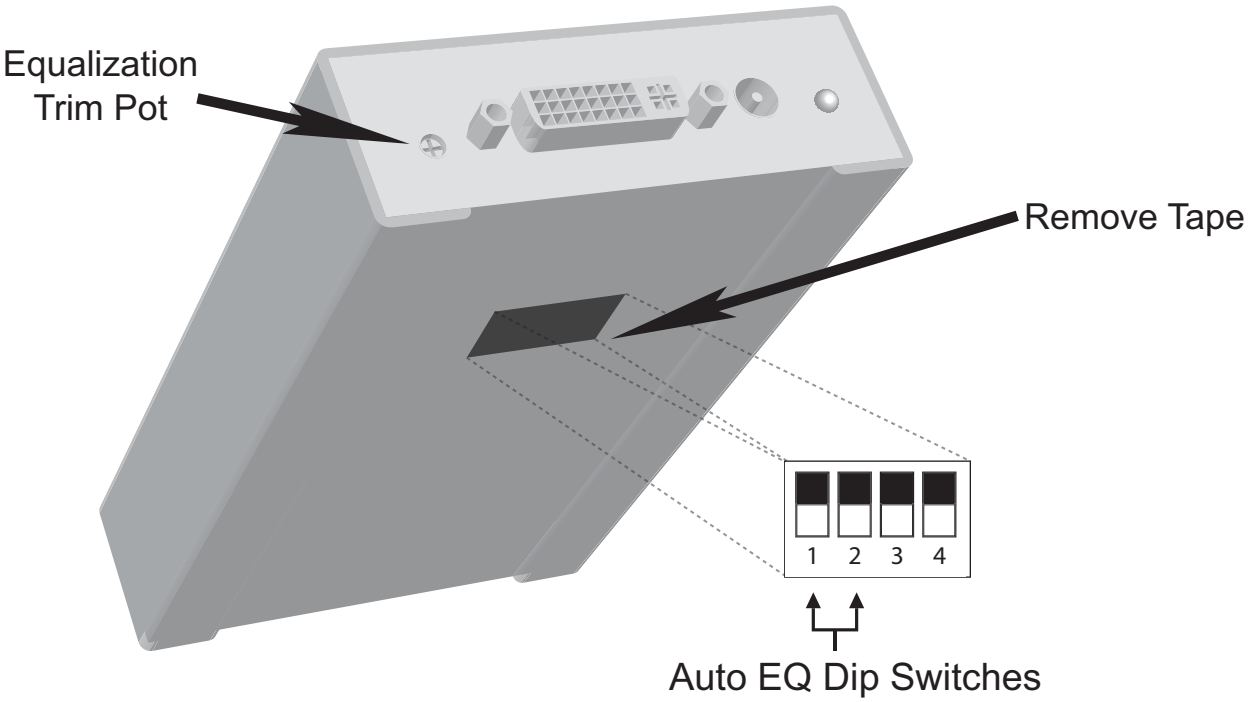
Receiver Dip Switch Settings		
Setting	**Switch 1**	**Switch 2**
Manual EQ	ON	OFF
Auto EQ (Default)	OFF	OFF

DIP SWITCH LOCATION DIAGRAM

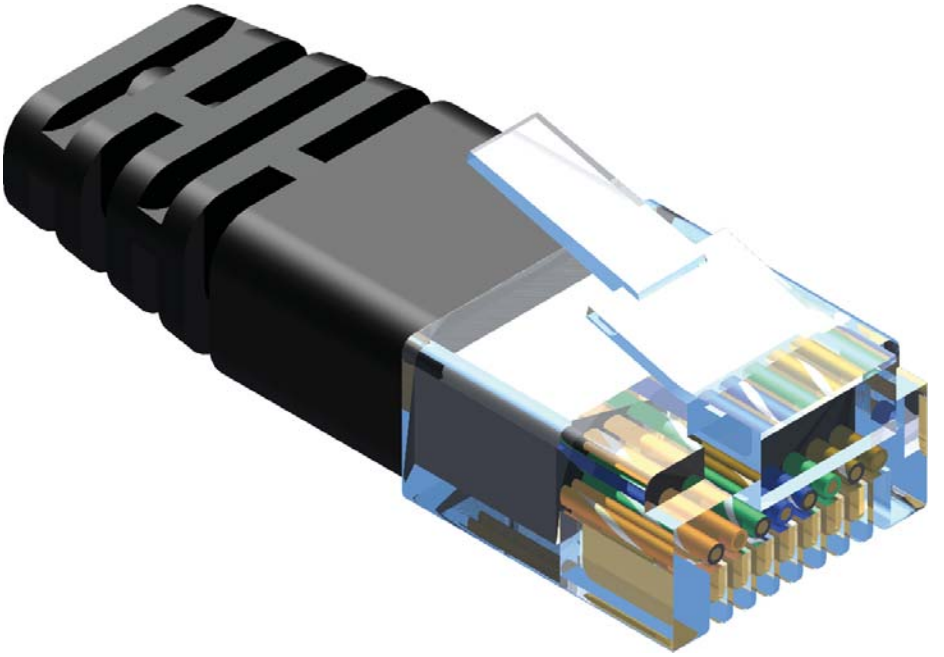
DVI CAT5 4X Extender



DVI CAT5 MSR

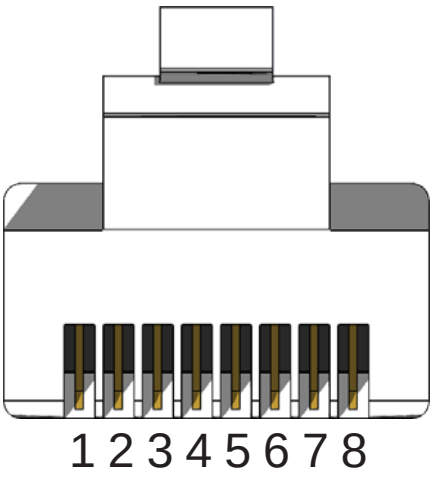


NETWORK CABLE WIRING DIAGRAM



Gefen has specifically engineered their products to work with the TIA/EIA-568-B specification. Please adhere to the table below when field terminating cable for use with Gefen products. Failure to do so may produce unexpected results and reduced performance.

Pin	Color
1	Orange / White
2	Orange
3	Green / White
4	Blue
5	Blue / White
6	Green
7	Brown / White
8	Brown



CAT-5, CAT-5e, and CAT-6 cabling comes in stranded and solid core types. Gefen recommends using solid core cabling. CAT-6 cable is also recommended for best results.

Each cable run must be one continuous run from one end to the other. No splices or use of punch down blocks.

RACK MOUNT INSTALLATION

Rack mount ears are provided for installation of this unit into a 1U rack mount space.

1. Locate the side screws on the unit.
2. Remove the front 2 screws that are located closest to the front of the unit.
3. Using the removed screws, screw the rack mounting bracket into the unit.
4. Repeat the procedure on the opposite side of the unit.

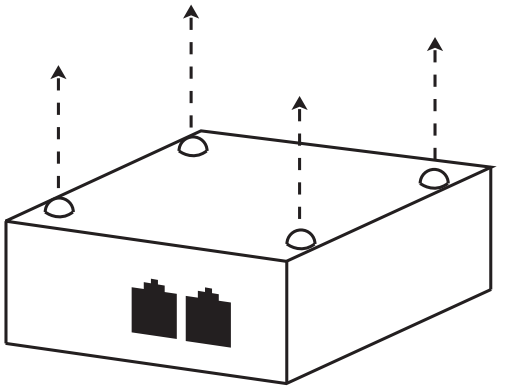
1

2

3

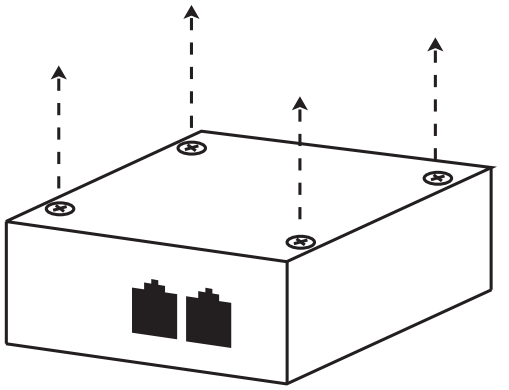
4

Mounting Plate Installation



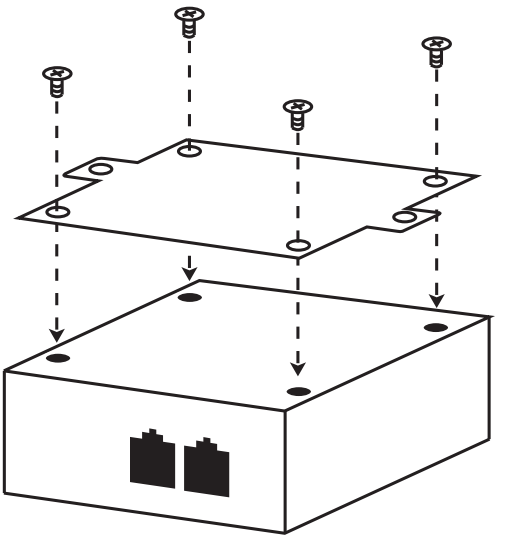
1

Remove the rubber feet covering the screws off the bottom of the unit.



2

Remove the screws.



3

Line up the mounting plates and screw it on to the unit.

SPECIFICATIONS

Video Amplifier Bandwidth .....4 x 165 MHz

Input Video Signal ..... 1.2 V p-p

Input DDC Signal ..... 5V p-p (TTL)

Single Link Range .....1080p / 1920 x 1200

DVI Connector Type ..... DVI-I 29 Pin Female (digital only)

Link Connector RJ-45

Power Consumption ..... 60W (max)

Transmitter Power Supply ..... 24V DC

Receiver Power Supply ..... 5V DC

Dimensions .....17” W x 1.75” H x 5.875” D

Shipping Weight .....10 lbs.

WARRANTY

Gefen warrants the equipment it manufactures to be free from defects in material and workmanship.

If equipment fails because of such defects and Gefen is notified within two (2) years from the date of shipment, Gefen will, at its option, repair or replace the equipment, provided that the equipment has not been subjected to mechanical, electrical, or other abuse or modifications. Equipment that fails under conditions other than those covered will be repaired at the current price of parts and labor in effect at the time of repair. Such repairs are warranted for ninety (90) days from the day of reshipment to the Buyer.

This warranty is in lieu of all other warranties expressed or implied, including without limitation, any implied warranty or merchantability or fitness for any particular purpose, all of which are expressly disclaimed.

1. Proof of sale may be required in order to claim warranty.

2. Customers outside the US are responsible for shipping charges to and from Gefen.

3. Copper cables are limited to a 30 day warranty and cables must be in their original condition.

The information in this manual has been carefully checked and is believed to be accurate. However, Gefen assumes no responsibility for any inaccuracies that may be contained in this manual. In no event will Gefen be liable for direct, indirect, special, incidental, or consequential damages resulting from any defect or omission in this manual, even if advised of the possibility of such damages. The technical information contained herein regarding the features and specifications is subject to change without notice.

For the latest warranty coverage information, refer to the Warranty and Return Policy under the Support section of the Gefen Web site at www.gefen.com.

PRODUCT REGISTRATION

Please register your product online by visiting the Register Product page under the Support section of the Gefen Web site.

ma-DVI-CAT5-4X

Rev A4

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This product uses UL listed power supplies.